

# GWMA Mission

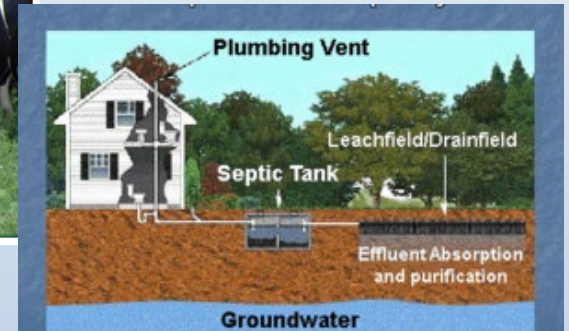
## Groundwater Management Area (GWMA)

The goal of the Lower Yakima Valley GWMA is to reduce nitrate concentrations in groundwater below state drinking water standards.



Groundwater  
Management Area  
(GWMA)

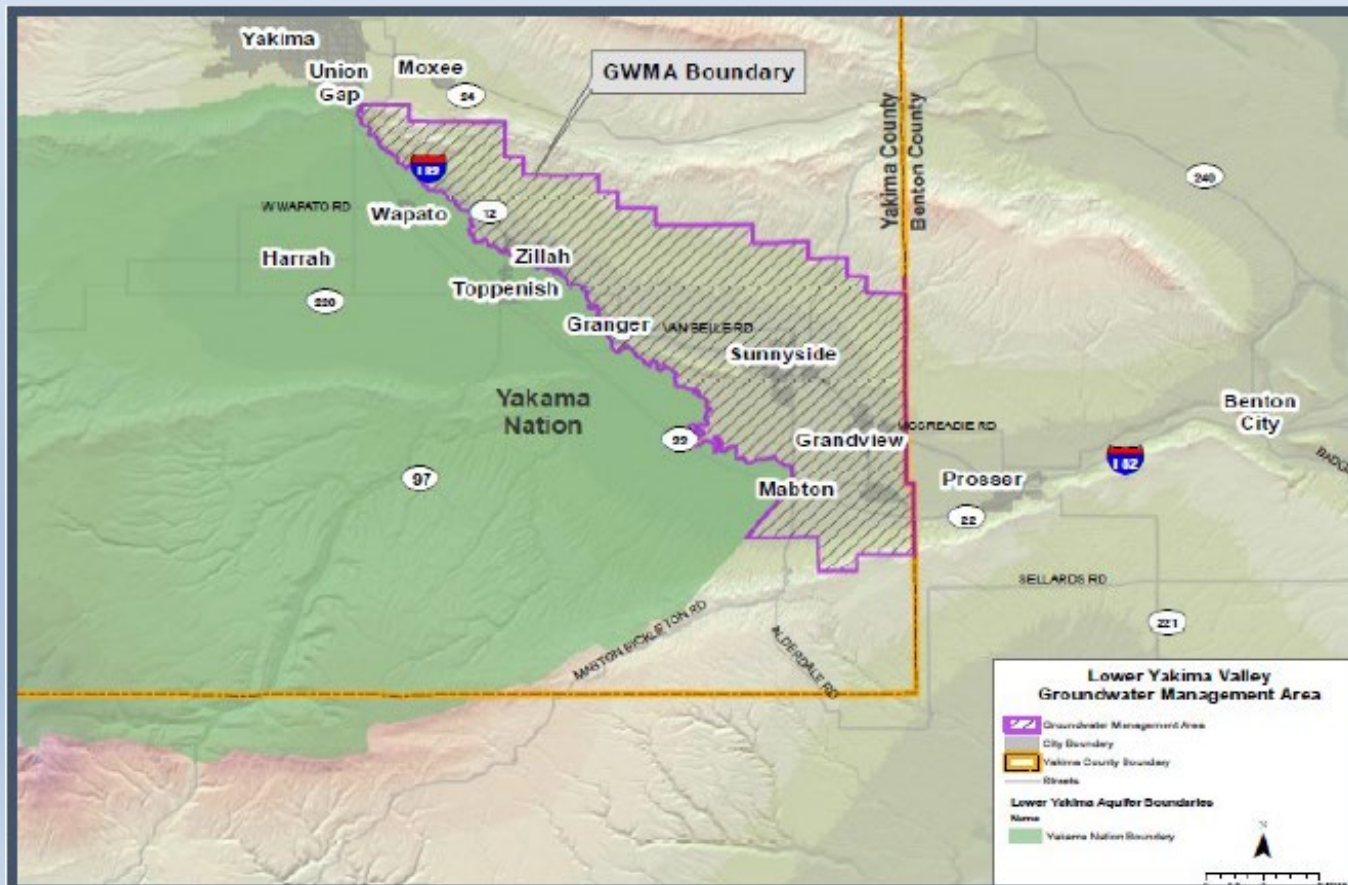
# Lower Yakima Valley GWMA



- The Lower Yakima Valley Groundwater Management Area (GWMA) was formed in 2012 to establish local control of a local issue.
- Its purpose: address high nitrate concentrations, above drinking water standards in 12-20% of private drinking water wells, ~2,000 people

# LYV GWMA

RCW 90.44.400 and WAC 173-100 provide the authority and guidelines to establish a GWMA and the required content of a program to address groundwater quality issues



# LYV-GWMA

Yakima County filled the role of Lead Entity

39 member Groundwater Management Advisory Committee, GWAC, representing 21 diverse interests guided the work, operating on a consensus basis over the last six years

Multiple work groups were formed:

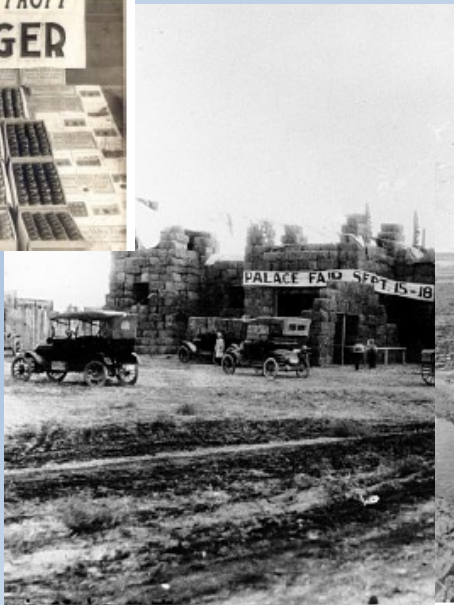
- Data Analysis - Livestock/CAFO - Irrigated Ag
- Education & Public Outreach - Regulatory Framework
- Residential, Commercial, Industrial & Municipal

Investigated sources of nitrate contamination and conducted peer review of data to develop recommended strategies



# LYV-GWMA

- Issue of legacy fertilizer, farming practices, on-site sewage systems, and livestock operations
- At risk/social justice populations
- Citizen lawsuits/Dairy settlements



# What did the GWAC Accomplish?

- Analysis of existing water quality data and studies
- Groundwater Monitoring Options
- Groundwater Monitoring plan
- Installation of 30 groundwater monitoring wells
- Extensive public education and outreach
  - door-to-door surveys;
  - billboards;
  - Website
- High Risk well assessment surveys
- Deep Soil Sampling
- Nitrogen Availability Assessment
- Drinking water quality assessment
- ❖ Produced a GWMA Program
  - 64 recommended actions
  - Unanimously approved







# LYV- GWMA



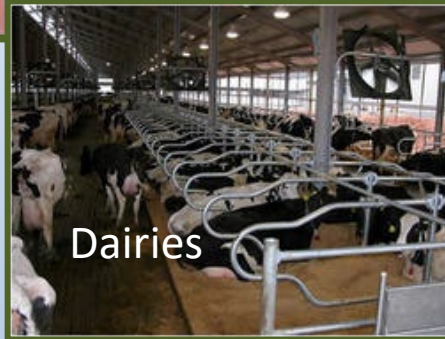
Health risks



Residential



Fertilizer



Dairies



Manure

**What were the GWAC Outcomes?**

**64 Recommended Actions to Reduce Nitrates in  
Groundwater**



# Ambient Groundwater Monitoring Network

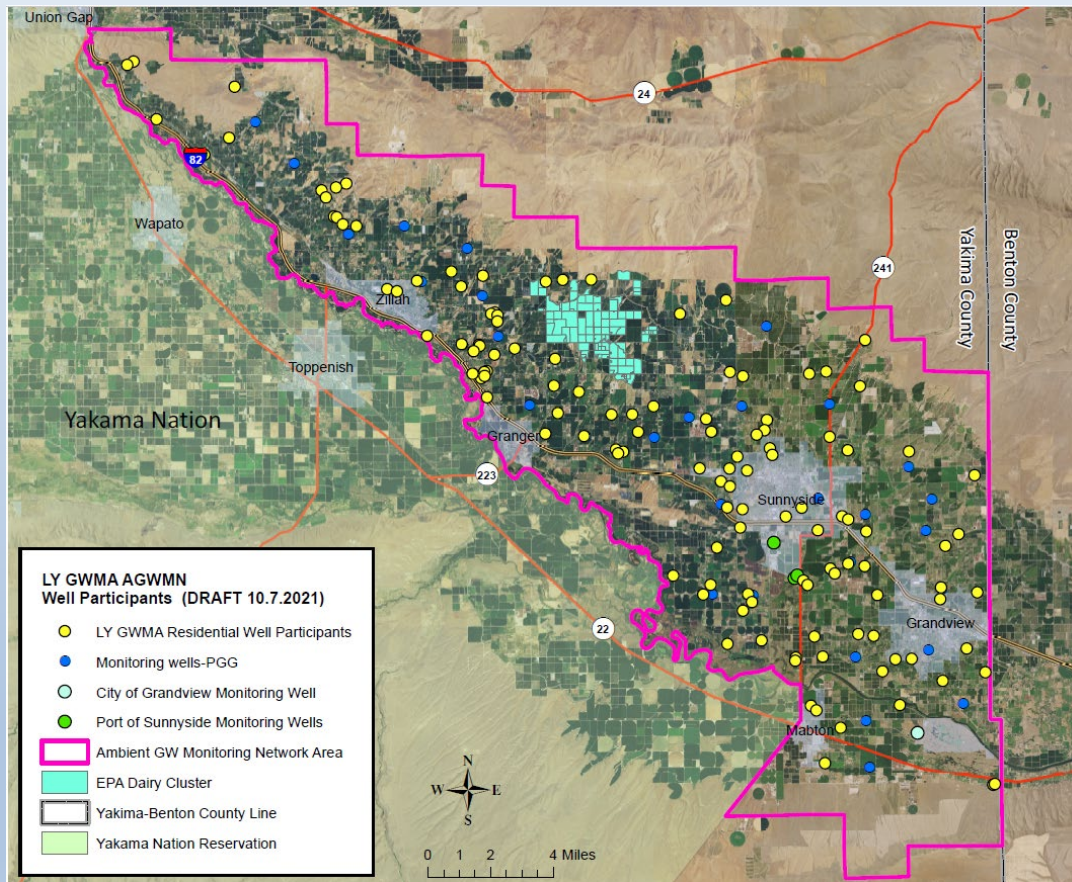
- This implements the top two GWMA priorities.
- Funded by the legislature in 2020.



- **Goal is to assess the long-term health of the aquifer over time.**
- Sample 170 wells
  - Nitrate
  - Quarterly for 2 years
  - Annually after that
  - 34 monitoring wells
  - 136 private domestic wells
- Measuring stick to evaluate effectiveness of nitrate reducing practices.



# Summer 2021 Preliminary Results

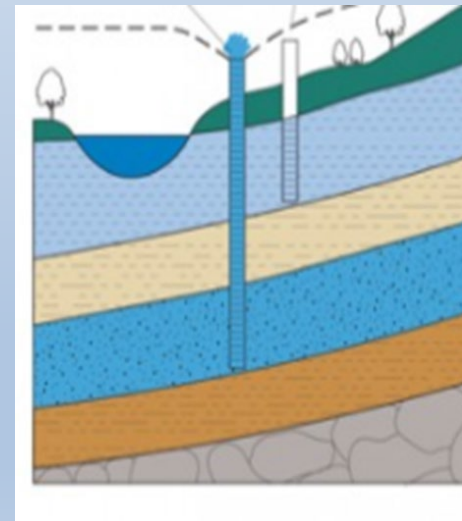


## All Wells

Wells less than drinking water standard (10 mg/L)	79%
Wells greater than 10 mg/L	21%
10 mg/L to 20 mg/L	13%
20 mg/L to 42 mg/L	7%
96 mg/L	0.6%

## Type of Wells

Monitoring wells greater than 10 mg/L	47%
Private domestic wells greater than 10 mg/L	15%



# Land Use and Groundwater

- Goal is to identify land use management practices that are effective in reducing nitrate in groundwater.
- 2022 Supplemental budget request
- Pilot studies using groundwater monitoring and deep soil sampling

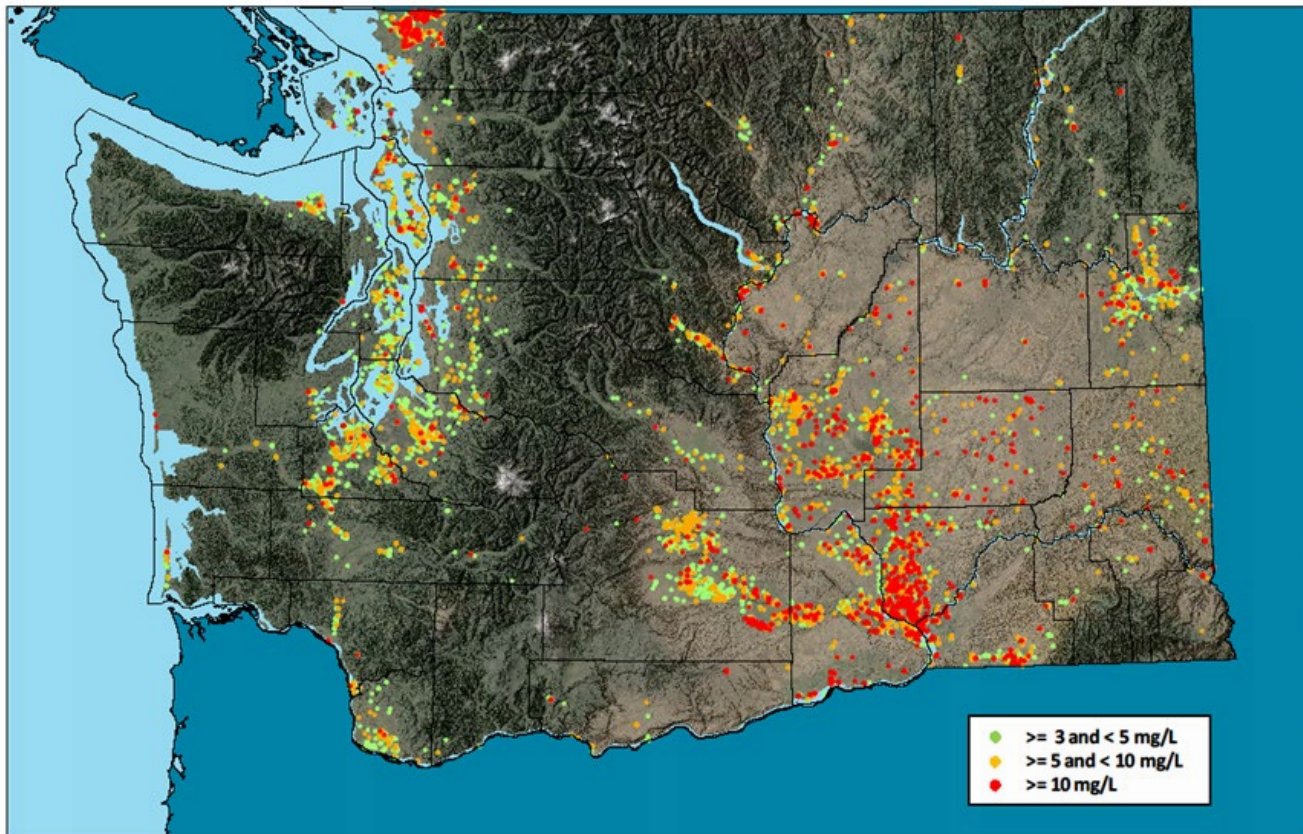


- Education and outreach to promote effective **voluntary** practices.
- Provide a balance point between people's livelihood and safe drinking water.
- Cooperative effort with SYCD and WSDA.





# Nitrate Concentrations in Groundwater



- Lower Yakima Valley
- Whatcom County
- Columbia Basin

Above 3 mg/L indicates a human source  
Above 5 mg/L increases monitoring and work for Public Water Supplies  
Above 10 mg/L, exceeds the health limit (EPA MCL)



# SYCD Deep Soil Sampling

Yakima Valley Ground Water Management Area (GWAC) recommendations include the ongoing implementation of the Deep Soil Sampling Program while identifying land use practices that are effective in reducing nitrate concentrations. South Yakima CD has and will continue working with landowners to implement practices that reduce nitrate levels in our Valley as indicated in our Short and Long-Range Work Plans.

South Yakima CD would like to continue Deep Soil Sampling, commencing with 4 Campaigns, Spring and Fall of 2022-2023 (2-years). SYCD is ready to start when funding becomes available.

**Thank You All for appropriating funds in 2020 as South Yakima CD was able to secure DSS Equipment.**

- ❖ 2014-16 GWAC commissioned a DSS Pilot project and sampled a ~175 fields.
  - ❖ 2022-2023 Field work would produce additional data needed to focus attention on areas of high Nitrate levels within the soil profile from selected Ag-field crops, Residential and other areas of concern as directed by GWMA Implementation committee.
  - ❖ SYCD would continue education and outreach to willing participants by providing TA with DNMP's, IWM and cost share to implement BMPs to willing landowners, municipalities, residents and the community as a whole.
- Complete a 2-year Deep Soil Sampling Campaign.

UTV Mounted Giddings Soil Sampler





Washington  
State Department of  
Agriculture

# WSDA and the GWAC Recommendations

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Kelly McLain, Legislative Liaison, Policy Advisor to the Director

Gary Bahr, Science Liaison, Director's Office

# WSDA GWMA Implementation Status



- Yakima County contains 16% of the state's dairies (40 family run businesses) but 39% of the total mature dairy cows.
- This has led Yakima dairies to work proactively with WSDA for more than 15 years on dairy nutrient topics.
- With no additional resources, WSDA's GWMA work has been focused in the Dairy Nutrient Management Program, and since January 1, 2019:
- 127 inspections:
  - *Routine inspections*: 46
  - *Technical assistance*: 47
  - *Lagoon assessments*: 4
  - *Facility closure*: 1
  - *Investigations*: 15
  - *Initial inspections*: 3
  - *Follow-up inspections*: 9
  - *Record review*: 2
- Eight enforcement actions: 1 NOC, 1 NOP, 1 NOV, 4 Warning Letters (incl. 1 Ecy to permitted CAFO)

# GWAC Recommendations



- Robust consensus-based evaluative process that evaluated 64 recommendations, identified and voted on appropriate lead agencies.
- WSDA is specifically identified as a lead or co-lead on many of these activities due to subject matter expertise (ground water, surface water, BMP implementation, soil health, land use practices), relationships with producers and landowners, and/or regulatory oversight.
- Ideally, WSDA would request resources to implement those activities that the GWAC identified as appropriately ours to either complete or coordinate on after those are ranked by the implementation committee.
- These resources were not requested in the Governor's budget for 2022 by WSDA.



# WSDA Resource Needs

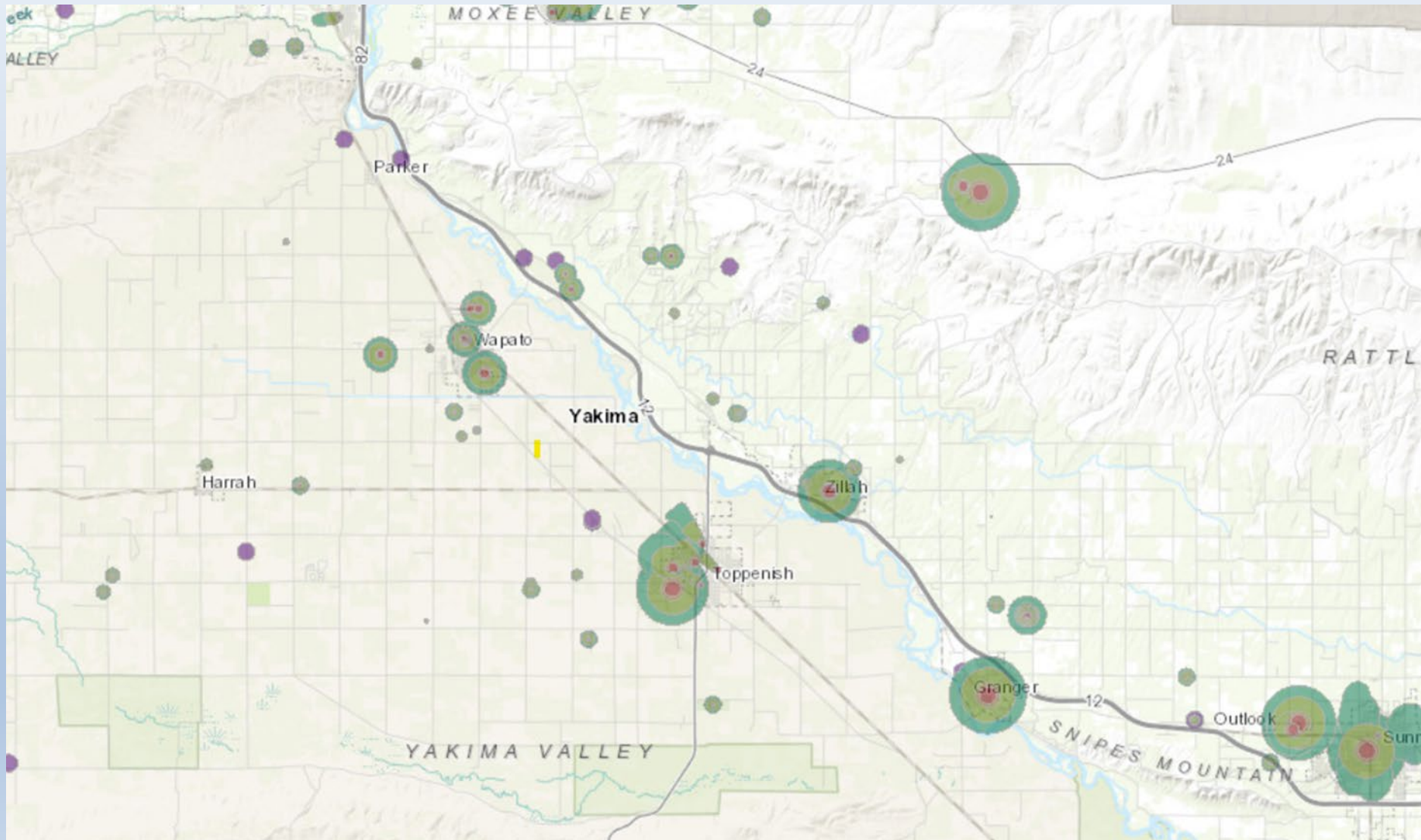


- WSDA has identified resource needs for initial GWAC recommendation implementation, including ongoing funding for 2.5 FTE's (1 DNMP, 1.5 NRAS, lab analysis and other ancillary support for soil health work – RCW 15.145)
- One-time funding in the amount of \$750,000 for WSDA pass through to WSU and SYCD for implementation is also recommended.
- Additional resources may be needed pending ranking by the implementation committee (ideally completed prior to 23-25 budget submittals next summer)

# WA Department of Health

- Access Foundational Public Health monies to assist YHD in providing potable water to homeowners whose private wells have been impacted by nitrate in the lower Yakima.
- Use our Source Water Protection Funds to delineate well head protection zones. This information, in conjunction with ground water quality and soil sampling data, will identify areas to support BMP work with our sister agencies.

# Well Head Protection Zones



# Yakima Health District

- Action Steps – Feasibility Study.
  - Map expansion of public utilities to high concentration areas in Urban Growth Areas without utilities.
  - Map new drinking water wells and septic system construction in areas that public utilities cannot reach.
  - Map target areas that have potentially high impact on groundwater.
  - Identify cost breakdown by area and total cost.
  - **Request \$175,000** to carry out this initial step of the project.
- Action Steps - Implementation.
  - Secure funding to expand public utilities, drinking water wells, and septic system installation in known high nitrate areas.